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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,945	11/28/2001	Gene L. Cangiani	0918.0111C	7284

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EXAMINER	
BLUDAU, BRANDON S	

ART UNIT	PAPER NUMBER
2132	

DATE MAILED: 10/03/2005.

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/994,945	CANGIANI ET AL.	
	Examiner	Art Unit	
	Brandon S. Bludau	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 9-12 are rejected under 35 U.S.C. 101 because they are directed towards non-statutory subject matter. A computer signal and a carrier wave are intangible.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4,8,12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Claims 4,8,12 are rejected because the term " substantially greater than " is a relative term which renders the claim indefinite. The term " substantially greater than " is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,3-5,8,9,11 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US Patent 5937000).

2. As per claim 1, Lee discloses a method of transmitting a signal, comprising:

Generating a sequence of pseudorandom noise chips at a base power level (column 8 line 20-22);

Increasing the power level of a first group of the sequence of chips above the base power level (column 8 lines 57-61 wherein the increasing of the power is achieved by adding the pseudorandom noise signal to the primary carrier signal); and

Increasing the power level of a second group of the sequence of chips above the base power level, wherein an interval of the first and second groups of the sequence of chips are related according to a varying relationship (column 8 lines 57-61 wherein the varying relationship is determined by the shape of the primary signal and wherein the increasing of the power is achieved by adding the pseudorandom noise signal to the primary carrier signal).

3. As per claim 3, Lee discloses the method of claim 1, wherein the power level of the first group of the chip sequence is different than the power level of the second group of the chip sequence (column 11 line 63 – column 12 line 2 wherein the power level of the second group may be adjusted to maintain desired power level).

4. As per claim 4, Lee discloses the method of claim 1, wherein the power levels of the first and second groups of the chip sequence are substantially greater than the base power level (column 8 lines 60-61 wherein d(t) is the pseudorandom noise signal).

5. As per claim 5, Lee discloses a method of receiving a signal including a code having boosted and non-boosted portions, wherein the boosted portions are separated by the non-boosted portions according to a predetermined algorithm (column 10 lines

23-48 wherein the signal including a code is the pseudorandom noise code generated by a pseudorandom algorithm), the method comprising:

Generating a local version of the code; partial sequences of a predetermined code, wherein the partial sequences are related by a predetermined algorithm separating the partial sequences by variable length intervals (column 10 lines 40-42);

Correlating the code with the received signal (column 10 lines 37-40);

Generating a decoding signal according to a predetermined algorithm (column 10 lines 42-45);

Detecting, based on the correlation and the decoding signal, boosted portions of the received signal having one or more power levels higher than a power level of non-boosted portions of the received signal (column 10 lines 45 –48 wherein the FEC encoding/decoding is optional); and

Determining a phase of the predetermined code based on the detected boosted portions of the received signal (column 10 lines 45-48).

6. As per claim 8, Lee discloses the method of claim 5, wherein said one or more power levels of the boosted portions of the received signal is substantially greater than the power level of the non-boosted portions of the received signal (column 8 lines 60-63).

7. As per claim 9, Lee discloses a computer signal embodied in a carrier wave, comprising (column 9 line 28-33):

A plurality of groups of low power chips;

A plurality of groups of high power chips, wherein the groups of low power chips are disposed between the groups of the high power chips and lengths of the groups of low power chips vary, and wherein the high power chips upon reception are suitable for processing by a computer (column 9 line 28-33 wherein the signal is described in column 8 line 55-63).

8. As per claim 11, Lee discloses the computer signal according to claim 9, wherein the lengths of the groups of high power chips are fixed (column 8 lines 57-63 wherein the high powered chips are determined by the pseudorandom noise code which by definition only alters the spacing of the pulses while maintaining a constant pulse length).

9. As per claim 12, Lee discloses the computer signal according to claim 9, wherein a power level of the high power chips is substantially greater than a power level of the low power chips (column 8 lines 60-63).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 2,6,7,10,13-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee as applied to claim 1 above, and further in view of Casabona (US Patent 5822429).

11. As per claim 2, Lee discloses the method of claim 1, wherein the varying relationship is an interval separating the first and second groups of the sequence of chips determined according to an algorithm (column 8 lines 57-61 wherein the algorithm is the pseudorandom noise code that embodies the primary signal), but does not disclose wherein the algorithm is cryptographic.

Casabona discloses a cryptographic algorithm to encrypt transmission characteristics of a signal in column 5 lines 57-63.

Casabona is analogous art because it discusses using a cryptographic algorithm to prevent unauthorized access to a signal.

It would have been obvious at the time of the invention to modify Lee so that the varying relationship determined the pulse interval by a cryptographic algorithm.

Motivation to combine Casabona as discussed above would have been to make "decoding, prediction and suppression difficult for users who are not supplied with the encryption pattern [.]" as taught in Casabona in column 5 lines 61-63.

12. As per claim 6, Lee discloses the method of claim 5, but does not disclose wherein the predetermined algorithm is a cryptographic algorithm.

Casabona discloses a method of using a cryptographic algorithm to secure transmission characteristics of a signal (column 5 lines 57-63).

Casabona is analogous art because it discusses using a cryptographic algorithm to prevent unauthorized access to a signal.

It would have been obvious at the time of the invention for one of ordinary skill in the art to modify Lee to utilize a cryptographic algorithm to determine the coded signal.

Motivation to modify Lee as discussed above would have been to make "decoding, prediction and suppression difficult for users who are not supplied with the encryption pattern [.]" as taught in Casabona in column 5 lines 61-63.

13. As per claim 7, Lee/Casabona disclose the method of claim 6, wherein the cryptographic algorithm varies an interval of non-boosted portions of the signal in an encrypted manner (Casabona: column 5 lines 57-63 wherein the pseudorandom algorithm is the cryptographic algorithm and determines the spacing of the boosted pulses with the encryption pattern).

14. As per claim 10, Lee/Casabona disclose the computer signal according to claim 9, wherein the lengths of the groups of low power chips vary according to a predetermined cryptographic algorithm (see claims 6 and 7 above).

15. As per claim 13, Lee discloses a transmitter suitable for transmitting a staggered pulse signal, comprising:

A code generator configured to generate a plurality of pulses according to a code (see Fig. 3 # 48);

An amplifier connected to the code generator and configured to amplify a first one of the pulses to a first level and to amplify a second one of the pulses to a second level (column 11 lines 43-49)

But does not disclose: a cryptographical unit configured to generate a cryptographical sequence based on a cryptographical key; and

an amplifier, wherein it amplifies a first one of the pulses to a first level and a second one of the pulses to a second level in response to the cryptographical sequence.

Casabona does disclose a cryptographical unit configured to generate a cryptographical sequence based on a cryptographical key (column 7 lines 52-56); and

An amplifier connected to the code generator and the cryptographical unit and configured to amplify a first one of the pulses to a first level and to amplify a second one of the pulses to a second level in response to the cryptographical sequence (column 8 lines 43-50).

Casabona is analogous art because it discusses a method of transmitting a coded signal.

It would have been obvious at the time of the invention for one of ordinary skill in the art to modify Lee to include the amplifier so that it is configured to boost the signal based on a cryptographic algorithm.

Motivation to modify Lee as discussed above would have been to make "decoding, prediction and suppression difficult for users who are not supplied with the encryption pattern [.]" as taught in Casabona in column 5 lines 61-63.

16. As per claim 14, Lee discloses the transmitter of claim 13, wherein the code is a pseudorandom noise (PN) code (see Fig.3 #48).

17. As per claim 15, Lee/Casabona disclose the transmitter of claim 13, wherein the amplifier is configured to respond to the cryptographical sequence to generate an

interval between the first and second pulses that is determined based on the cryptographical sequence (column 8 lines 43-50).

18. Claim 16 is rejected for disclosing the same subject matter as claim 13.

19. Claim 17 is rejected for disclosing the same subject matter as claim 14.

20. Claim 18 is rejected for disclosing the same subject matter as claim 15.

21. As per claim 19, Lee/Casabona disclose a receiver for a staggered pulse signal having high-power pulses of a code separated by intervals according to a cryptographic algorithm (see claim 15), Lee discloses a receiver comprising:

A code detection unit configured to detect a code phase of the received staggered pulse signal (column 10 lines 37-48), but does not disclose wherein the signal is based on the cryptographic sequence generated by the cryptographic unit, and Lee also does not disclose the cryptographic unit configured to generate the cryptographic sequence.

Casabona discloses a cryptographic unit configured to generate a cryptographic sequence corresponding to the cryptographic algorithm (column 10 lines 41-45);

And the code detection unit connected to the cryptographic unit and configured to detect a code phase of the received staggered pulse signal based on the cryptographic sequence generated by the cryptographic unit (column 10 line 45-49).

Casabona is analogous art because it discusses a method of receiving a coded signal.

It would have been obvious for one of ordinary skill in the art to modify Lee to include the cryptographic unit to generate a cryptographic sequence and the code detection unit described above.

Motivation for one to modify Lee is discussed above would have been to make "decoding, prediction and suppression difficult for users who are not supplied with the encryption pattern [.]" as taught in Casabona in column 5 lines 61-63.

22. As per claim 20, Lee/Casabona disclose the receiver of claim 19, wherein the code detection unit comprises:

A correlator configured to correlate the received signal with a local code and to output a correlation signal (Lee column 10 lines 37-40); and

A decoder unit configured to decode the correlated signal based on the cryptographic sequence generated by the cryptographic unit (Lee column 10 lines 45-48; wherein the cryptographic sequence generated by the cryptographic unit is discussed in claim 19).

23. As per claim 21, Lee/Casabona disclose the receiver of claim 20, wherein the decoder unit comprises a matched filter configured to detect a sequence of intervals between the high power pulses of the received signal corresponding to the cryptographic sequence (Lee column 25 lines 25-48).

24. As per claim 22, Lee/Casabona disclose the receiver of claim 21, wherein the cryptographic unit comprises a cryptographic processing unit and a cryptographic storage unit having stored therein cryptographic keys, wherein the cryptographic processing unit generates the cryptographic sequence based on a key stored in the

cryptographic storage unit (Casabona column 10 lines 41-45 wherein the encryption key is stored in the CODEC processor as the processing occurs).

25. As per claim 23, Lee/Casabona disclose the receiver of claim 19, wherein the code of the staggered pulse signal is a pseudorandom noise (PN) code (Lee column 8 lines 20-22).

26. Claim 24 is rejected because it discusses the same subject mater as claim 19.

27. Claim 25 is rejected because it discusses the same subject matter as claim 20.

28. Claim 26 is rejected because it discusses the same subject matter as claim 21.

29. Claim 27 is rejected because it discusses the same subject matter as claim 23.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brandon S. Bludau whose telephone number is 571-272-3722. The examiner can normally be reached on Monday -Friday 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brandon S Bludau
Examiner
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